

Application No. 10/733,491  
Response to Office Action

Customer No. 01933

**Listing of Claims:**

Claims 1-10 (Canceled).

11. (New) A microchemical system comprising:

a channel for holding a fluid sample;

a converging lens for convergently irradiating exciting  
light and detecting light onto the fluid sample such that a focal  
position of the exciting light is located in the channel;

an optical fiber for guiding the exciting light and the  
detecting light to the converging lens;

a modulator for modulating the exciting light;

a single detector paired with the converging lens to detect  
the detecting light after the detecting light passes through a  
thermal lens generated in the fluid sample by the convergent  
irradiation of the exciting light; and

a synchronizing device which synchronizes an output signal  
of the detector with the modulation of the exciting light by the  
modulator.

12. (New) The microchemical system as claimed in claim 11,  
wherein the converging lens is secured to an end of the optical  
fiber that is closer to the sample.

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13. (New) The microchemical system as claimed in claim 12, wherein the optical fiber comprises a single optical fiber.

14. (New) A microchemical system as claimed in claim 12 or 13, wherein the exciting light and the detecting light have respective different frequencies, the converging lens has chromatic aberration, and the exciting light and the detecting  
5 light passing through the converging lens have respective different focal positions.

15. (New) The microchemical system as claimed in any one of claims 11 to 13, wherein the converging lens comprises a gradient index lens.

16. (New) The microchemical system as claimed in claim 15, wherein the gradient index lens comprises a rod lens.

17. (New) The microchemical system as claimed in any one of claims 11 to 13, wherein the optical fiber exhibits a single mode in frequencies of the exciting light and the detecting light.

18. (New) The microchemical system as claimed in claim 12 or 13, further comprising moving means for moving the optical fiber having the converging lens secured to the one end thereof

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in a direction parallel to a channel-formed element in which the channel is formed.

19. (New) The microchemical system as claimed in claim 12, wherein the system comprises at least two converging lenses, each secured to a corresponding optical fiber.

20. (New) The microchemical system as claimed in claim 14, wherein the converging lens comprises a gradient index lens.

21. (New) The microchemical system as claimed in claim 11, further comprising a channel-formed element in which the channel is formed;

wherein the converging lens is fixed in opposed relation to the channel-formed element.

22. (New) The microchemical system as claimed in claim 21, wherein the converging lens is fixed in contact with the channel-formed element.